BCR08AS

LOW POWER USE

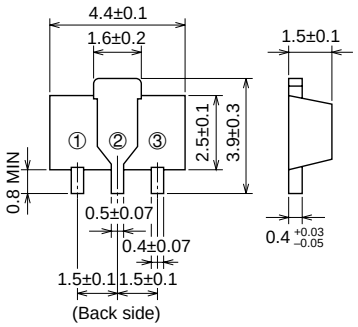
NON-INSULATED TYPE, PLANAR PASSIVATION TYPE

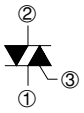
BCR08AS

- **IT (RMS) 0.8A**
- **VDRM 600V**
- **IFGT Ⅰ, IRGT Ⅰ, IRGT Ⅲ 5mA**
- **IFGT Ⅲ 10mA**

OUTLINE DRAWING

Dimensions in mm





① T1 TERMINAL
② T2 TERMINAL
③ GATE TERMINAL

SOT-89

APPLICATION

Hybrid IC, solid state relay,
control of household equipment such as electric fan · washing machine,
other general purpose control applications

MAXIMUM RATINGS

Symbol	Parameter	Voltage class	Unit
		12 (marked "BF")	
VDRM	Repetitive peak off-state voltage *1	600	V
VDSM	Non-repetitive peak off-state voltage *1	720	V

Symbol	Parameter	Conditions	Ratings	Unit
IT (RMS)	RMS on-state current	Commercial frequency, sine full wave 360° conduction, Ta=40°C *3	0.8	A
ITSM	Surge on-state current	60Hz sinewave 1 full cycle, peak value, non-repetitive	8	A
I^2t	I^2t for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	0.26	A^2s
PGM	Peak gate power dissipation		1	W
PG (AV)	Average gate power dissipation		0.1	W
VGM	Peak gate voltage		6	V
IGM	Peak gate current		1	A
Tj	Junction temperature		–40 ~ +125	°C
Tstg	Storage temperature		–40 ~ +125	°C
—	Weight	Typical value	48	mg

*1. Gate open.

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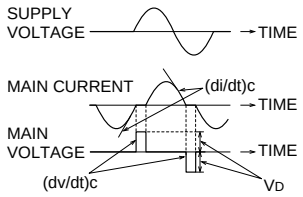
ELECTRICAL CHARACTERISTICS

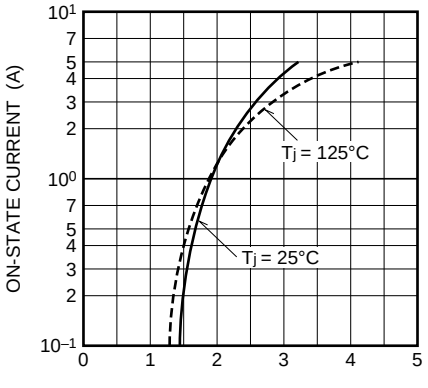
Symbol	Parameter		Test conditions	Limits			Unit
				Min.	Typ.	Max.	
I_{DRM}	Repetitive peak off-state current		T_j=125°C, V_{DRM} applied	—	—	1.0	mA
V_{TM}	On-state voltage		T_c=25°C, I_{TM}=1.2A, Instantaneous measurement	—	—	2.0	V
$V_{FGT\ I}$	Gate trigger voltage *2	I	T_j=25°C, V_D=6V, R_L=6Ω, R_G=330Ω	—	—	2.0	V
$V_{RGT\ I}$		II		—	—	2.0	V
$V_{RGT\ III}$		III		—	—	2.0	V
$V_{FGT\ III}$		IV		—	—	2.0	V
$I_{FGT\ I}$	Gate trigger current *2	I	T_j=25°C, V_D=6V, R_L=6Ω, R_G=330Ω	—	—	5	mA
$I_{RGT\ I}$		II		—	—	5	mA
$I_{RGT\ III}$		III		—	—	5	mA
$I_{FGT\ III}$		IV		—	—	10	mA
V_{GD}	Gate non-trigger voltage		T_j=125°C, V_D=1/2V_{DRM}	0.1	—	—	V
$R_{th\ (j-a)}$	Thermal resistance		Junction to case *3	—	—	65	°C/W
$(dv/dt)_c$	Critical-rate of rise of off-state commutating voltage	*4	T_j=125°C	0.5	—	—	V/µs

*2. Measurement using the gate trigger characteristics measurement circuit.
*3. Mounted on 25mm × 25mm × t0.7mm ceramic plate with solder.
*4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below.

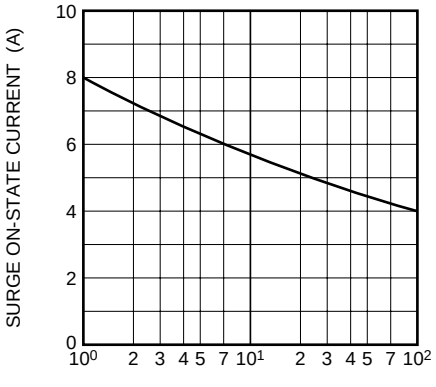
Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature T_j=125°C 2. Rate of decay of on-state commutating current $(di/dt)_c$=–0.4A/ms 3. Peak off-state voltage V_D=400V	

PERFORMANCE CURVES

MAXIMUM ON-STATE CHARACTERISTICS



RATED SURGE ON-STATE CURRENT



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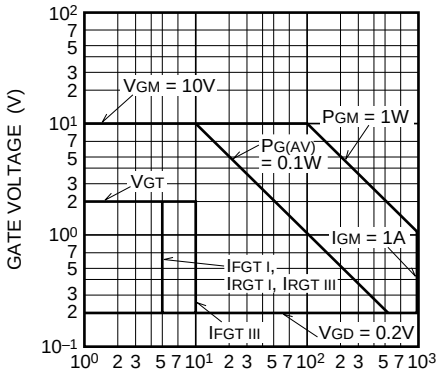
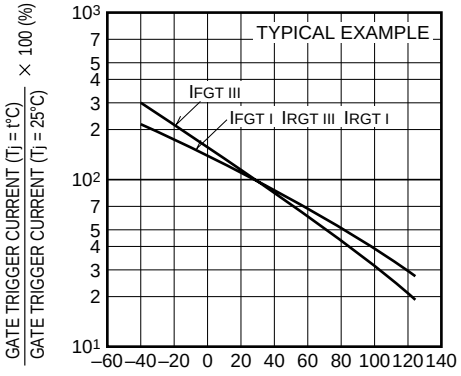
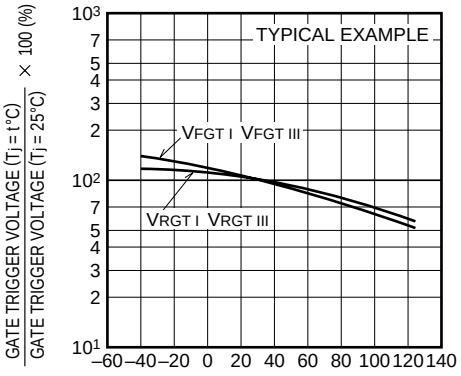
GATE CHARACTERISTICS



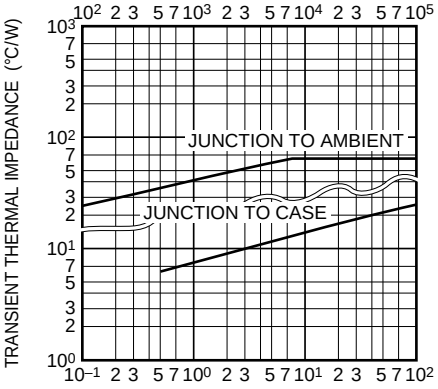
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



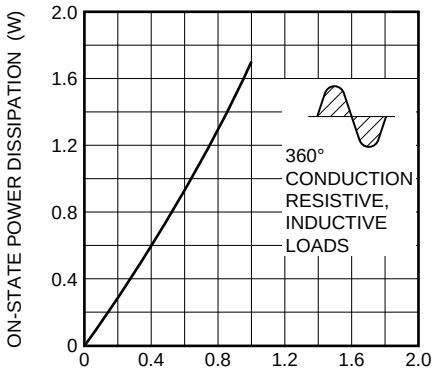
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



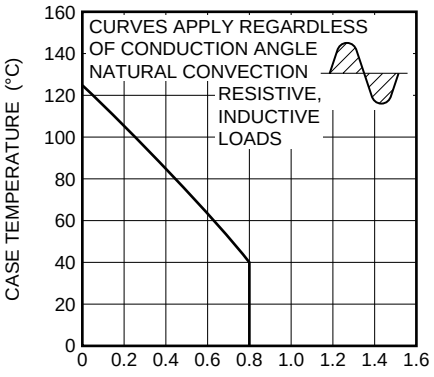
MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS



MAXIMUM ON-STATE POWER DISSIPATION



ALLOWABLE CASE TEMPERATURE VS. RMS ON-STATE CURRENT



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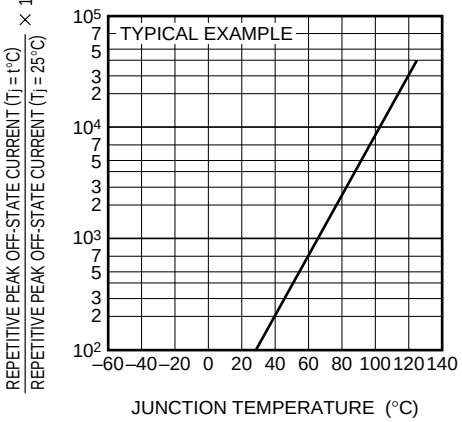
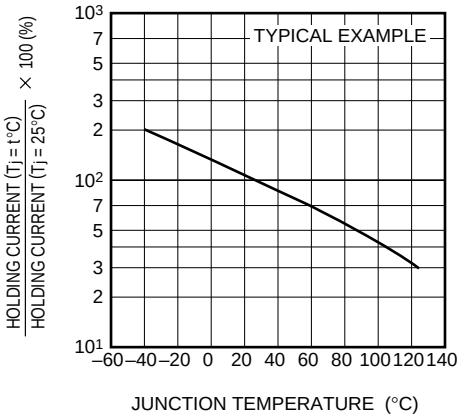
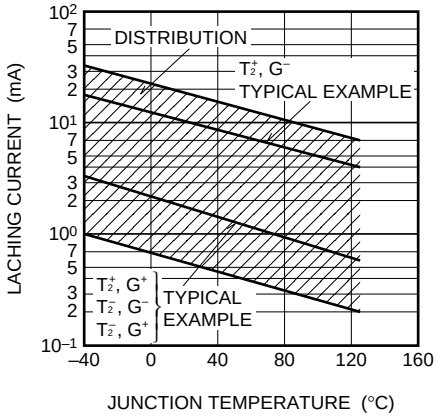
REPETITIVE PEAK OFF-STATE CURRENT VS. JUNCTION TEMPERATURE



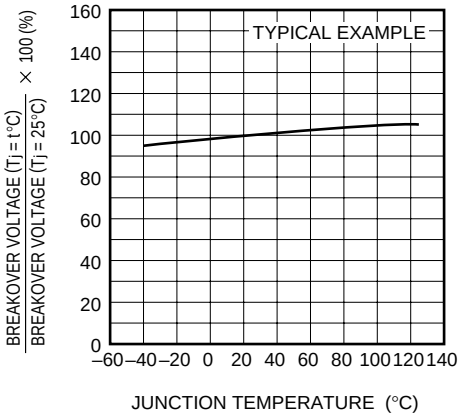
HOLDING CURRENT VS. JUNCTION TEMPERATURE



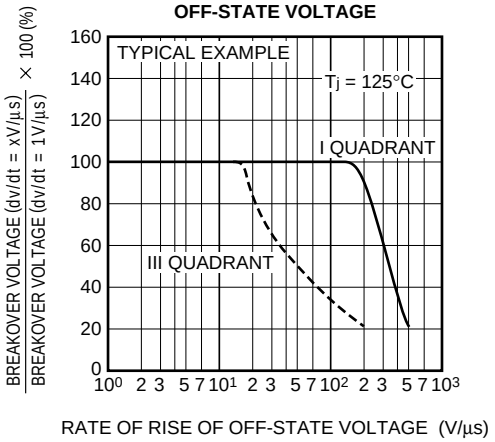
LACHING CURRENT VS. JUNCTION TEMPERATURE



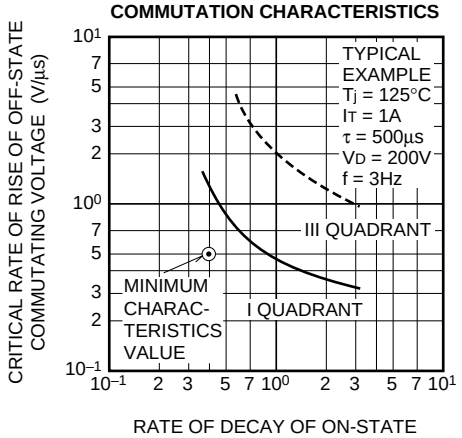
BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE



BREAKOVER VOLTAGE VS. RATE OF RISE OF OFF-STATE VOLTAGE



COMMUTATION CHARACTERISTICS



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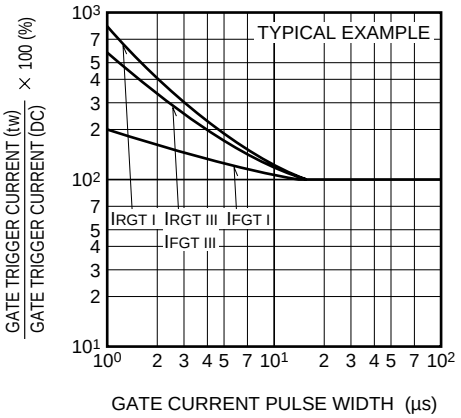
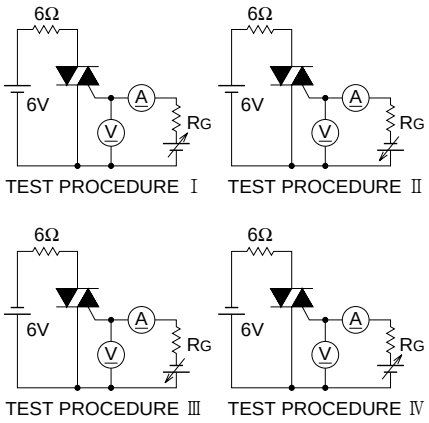
GATE TRIGGER CURRENT VS. GATE CURRENT PULSE WIDTH



GATE TRIGGER CHARACTERISTICS TEST CIRCUITS



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